

## SECTION 5000. CONSTRUCTION REQUIREMENTS

### 5100. SEQUENCE OF WORK.

Prior to starting any construction activities, a registered land surveyor shall set off grade stakes along the roadway right-of-way, centerline, sidelines, and sidewalks at one hundred foot (100') intervals. All trees to be preserved shall be flagged. The sit shall be walked with a designated representative of the Department of Public Works. All construction and work sequencing shall be conducted in accordance with the following sections.

#### 5110. Clearing

1. The entire area to be paved of each street, way, sidewalk, and/or bike path, if required, shall be cleared of all stumps, brush, roots, boulders and like material, and all trees not intended for preservation.
2. Beneath all areas proposed to be paved, all loam or soft, spongy or otherwise undesirable material such as peat, roots, mulch or quicksand shall be removed to whatever depth it occurs.
3. This work shall be inspected and approved as hereinafter described before continuance of the project.

#### 5120 Rough Grading

1. The entire length and width of the vehicular way shall be brought to a firm subgrade at least nine (9) inches below the finished grade shown on the profile.
2. The entire length and width of the sidewalk, if required, shall be brought to a firm subgrade at least nine (9) inches below the finished grade desired.
3. All fill or ordinary borrow for the subgrade shall consist of any firm bearing material, except loam or organic matter, meeting the approval of the DPW Superintendent and of the consulting engineer, if any.
4. This work shall be inspected and approved as hereinafter described before continuance of the project.

#### 5130. Finish Grading and Paving.

1. If required, permanent stone or concrete curbing matching that of existing adjacent streets, shall be installed at a nominal height of six (6) inches above gutter with bottom at least twelve (12) inches below the surface of the pavement.
2. All subgrades of vehicular ways shall be covered with at least twelve (12)

inches of well-compacted gravel to a point three (3) inches below the finish grade shown on the profile, with a traverse pitch from centerline to pavement edge of one quarter (1/4) inch per foot. All vehicular ways shall then be finished with bituminous concrete meeting Massachusetts DPW current standards. Concrete to be applied in a two (2) inch binder core and subsequent one (1) inch top coat, both well-rolled and compacted to maintain the pitch above noted.

3. If required, all subgrades of sidewalks shall be covered with at least six (6) inches of well-compacted gravel to the desired finish grade and pitched one-quarter (1/4) inch per foot toward the vehicular way. The surface shall then be treated as required for vehicular ways. Where driveways cross such paved areas of sidewalks, the elevation of such driveway shall conform to the elevation of the paved sidewalk area.
4. The subgrade under the roadway gravel base shall be a free-draining material for a minimum depth of two (2') feet and shall conform to the requirements of Section M1.02.0 or M1.03.0 of the Standard Specifications. Existing soils that do conform to these requirements shall be removed.
5. The gravel base of the roadway and sidewalks shall consist of unfrozen, hard, durable stone and coarse sand, free from loam and clay, uniformly graded, containing no stone having a diameter of more than three (3) inches and conforming to the requirements of the Section M1.03.1 of Standard Specifications.
6. Gradation tests (sieve analysis) and Proctor tests (optimum density) shall be performed by an approved independent testing laboratory on the material to be utilized as gravel base and shall be submitted to the Department of Public Works for review. This analysis shall be done at the expense of the subdivider in advance of applying or grading the material. The Board may, at any time during the roadway construction, require additional testing.
7. Before the gravel is spread, the roadbed, shall be sloped to a true surface, conforming to the proposed cross section of the road, and no gravel is to be spread until this subgrade is approved by the Board.
8. Gravel for base shall be spread in two (2) layers of equal thickness, each thoroughly rolled true to lines and grades so as to yield a total depth of twelve (12) inches after thorough compaction. Any depression or soft spots that appear during or after rolling shall be filled with crushed bank gravel and be re-rolled until the surface is true and even. Gradation and compaction tests shall be performed and submitted to the Board for review. Testing results shall be satisfactory to the board prior to placement of base course of pavement.
9. All sidewalk areas shall be provided with a gravel base foundation consistent with that required for roadways. Gradation and compaction tests shall be performed and submitted to the Board for review.
10. All frames, grates, manhole covers and water gates shall be adjusted to the proper finished grade by setting the same in a two-thousand-five-hundred-pound-per-square-inch (2,500 lb./sq.in) concrete bed. Any depressions or irregularities in the binder pavement are to be repaired and shall be inspected by the Board's representative at least one (1) week before final paving.
11. The binder course pavement must be swept clean of all loose material. A tack coat of emulsified asphalt shall be applied with a pressure distributor at a rate of ten-hundredths (0.10) gallons per square yard, immediately preceding the top course

paving. An environmentally safe synthetic mat specifically designed for the purpose may be substituted for the tack coat of emulsified asphalt.

12. All roadways shall be prepared in such a manner that all manholes, catch basins, valve gates or other structures in a roadway are installed with bituminous paving around the perimeter of each such structure such that a smooth transition is maintained between the top of each structure and the road surface.
13. If requested by the Board, compaction and plane of finished surface tests shall be performed on the top course paving once in place. All requested testing shall be performed by an independent testing laboratory at the expense of the subdivider. The Board may request remedial repairs or replacement of any portion of the pavement system if it fails to meet these and/or the Standard Specifications.
14. The developer shall make and maintain all subdivision roadways so that any and all occupied dwelling units within the subdivision are easily accessible to all municipal and emergency services. In addition to the above requirement, the developer must comply with the following conditions to the satisfaction of the Board prior to the first day of December (the beginning of the wintering over period).
15. All grass strips and other areas within the street right-of-way shall be covered with at least six (6) inches of loam (depth after compaction) and planted with high quality grass seed. Seeding of lawn grass shall be done after building construction has been completed on the adjacent lots.
16. This work shall be inspected and approved as hereinafter described before continuance of the project.

#### 5131. Curbing

Standard Type VA-4 granite curbing with six (6) inch reveal, sloped granite face curbing or bituminous concrete curbing if determined by the Planning Board, shall be installed along both gutter lines of all ways for their entire lengths except that granite curbing shall be installed along said gutter lines under the following conditions:

1. All finished street grades over five (5%) percent.
2. All headers for catch basins (to be set back four (4) inches from the edge of pavement).
3. All street intersections on the curve and extending six(6) feet tangential to the point of curvature and point of tangency along the sideline line of roadway at the intersection; and
4. Other specific locations as determined by the Board.
5. Granite curbing shall be set in concrete and on at least six (6) inches of compacted bank gravel in accordance, with the cross-section. Straight ended granite curb inlet stones shall be used in all instances.

#### 5140. Construction.

Drainage facilities shall be provided as indicated on the Definitive Plan and in

conformity with the requirements of Sections 200, 220, and 230 of the MDPW Standard Specifications

1. Pipe culvert and pipe drains shall be in conformity with the requirements of Section 230 of the MDPW Standard Specifications for installations of pipes.
2. No backfilling of pipes shall be done unless and until the installation has been inspected by the Town Engineer. All drainage trenches shall be filled with clean gravel borrow in accordance with Section 150 of the MDPW Standard Specifications.
3. Where sub-drains are required they shall be constructed in conformance with Section 260 of the MDPW Standard Specifications. Such sub-drains may be required by the board following clearing and grubbing operations.
4. No drainage pipes from roof drains, driveway drains or other on-lot sources shall be connected to the street drainage system without the express written approval of the Planning Board.
5. Catch basins shall be constructed with cast-iron frames and grates. Frames must be set in a full bed of cement mortar. Bricks shall be used between the frame and top course for grade adjustments. They shall be laid in a radial fashion with full bearing on the ring row. A maximum of two (2) brick courses will be allowed. Frames shall be at least two-hundred sixty-five (265) pounds and shall be of North American manufacture. Grates shall be twenty-four (24) inches square with square openings. Grates shall be no less than two hundred ten (210) pounds, in accordance with Standard Specifications and shall be of North American manufacture.
6. Granite curb inlets shall be provided at all catch basins.
7. Manholes shall be constructed with cast-iron frames and covers. Frames must be set in a full bed of cement mortar. Bricks shall be used between the frame and top course for grade adjustments. They shall be laid in a radial fashion with full bearing on the ring row. A maximum of two (2) brick courses will be allowed. Frames shall be at least two-hundred sixty-five (265) pounds and shall be of North American manufacture. Covers shall be no less than two hundred ten (210) pounds, in accordance with the Standard Specifications and shall be of North American manufacture. Drain manhole covers shall be twenty-four (24) inches in diameter and shall have the word "DRAIN" shall be cast into them in letters at least three (3) inches in height. Sewer manhole covers shall be thirty (30) inches in diameter and shall have the word "SEWER" cast into them in letters at least three (3) inches in height.
8. Manholes shall have rung steps fifteen (15) inches on center built into the vertical side.
9. After the completion of roadway work, the manhole casting shall be set flush with the designed finish grade of pavement. Catch basin grates shall be set one (1) inch below the finished gutter. Manhole castings and catch basin grates shall not be raised until thirty (30) days prior to final paving. If paving does not occur within said thirty (30) days, they shall be lowered immediately. Ramping is prohibited.

#### 5150. Monuments.

Monuments shall conform to the standard specifications acceptable to the Massachusetts Land Court and shall be set according to such specifications. No permanent monuments shall be installed until all construction which would destroy the monuments is completed.

Monuments shall be installed at all street intersections, at all points of change in direction or curvature of streets and at other points where, in the opinion of the Planning Board, permanent monuments are necessary.

Permanent boundary markers shall be placed on lot boundaries. The minimal number is four (4): either at the four (4) corners or two (2) at the roadway and two (2) at a set back distance acceptable to the Board.

#### 5160. Street Signs.

The applicant shall install standard street signs displaying the name of each street in the subdivision to be located so that the public can identify each street. Signs shall be equivalent in size, design and quality to those used by the town for its streets and may be purchased for the Town DPW.

#### 5170. Inspection and Approval Procedures.

The applicant shall proceed with this work as previously specified and when completed he shall request inspection and final written approval of the street or way or portion that is under construction.

The Planning Board shall control the construction of the streets or ways of the subdivision by inspection and approval of the work through the services of the Superintendent of the DPW, or his agent, and by the consulting engineer, if any. The necessary approvals for each step of the construction must be obtained by the applicant in the aforementioned sequence of work.

The Planning Board may, in cases of minor construction or undue hardship upon applicant, waive any inspection except that which is required for final approval by issuing provisional approval pending full approval after the next inspection.

It shall be the applicant's responsibility to notify the Board when a portion of the work is ready for inspection and the Board shall cause said inspection to be made

within seven (7) days of receipt of such notice, Saturdays, Sundays and holidays excluded.

Approval of the work inspected shall be given to the applicant by the superintendent of the DPW before the next portion of work is commenced in the street or way, and such approval shall be forwarded to the Planning Board by the Superintendent of the DPW.

If corrections are required in the work they shall be made before approval is given for a portion and before subsequent work is stated, unless written authority by the Planning Board is given to proceed into the next portion of work while making the required corrections.

Failure to carry out the provisions of this paragraph shall be cause for the Planning Board to order such work done as may be necessary to make adequate inspection and correction of the work under construction, at the expense of the applicant.